WATER SOURCEBOOK

A Series of Classroom Activities for

Grades 6-8

Produced for

LEGACY, INC.

Partners in Environmental Education

in cooperation with

U.S. ENVIRONMENTAL PROTECTION AGENCY

Prepared by

UNIVERSITY OF SOUTH ALABAMA

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For information about obtaining a copy of the Water Sourcebook,

a. **The Georgia Water Wise Council, 1033 Franklin Road, Suite 9-187, Marietta, GA 30067-8004 USA, 770/483-9474, 770/426-6901 (fax), or web page: www.griffin.peachnet.edu/waterwise/wwc.htm.**

b. **The Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314-1994 USA, 800-666-0206 (phone), 703-684-2492 (fax), or web page: www.wef.org.**

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EFFECTS OF LOST SALT MARSHES

6-8

SUBJECTS:
Biology, Botany, Ecology

TIME:
2 class periods

MATERIALS:
magazines for "cut-out" pictures
transparencies
pens for transparencies
paper for drawing and charts
teacher sheets
student sheets

OBJECTIVES

The student will do the following:

1. Relate the importance of the salt marsh to the food chain.
2. Compose a position statement that will explain why the salt marsh should not be developed.

BACKGROUND INFORMATION

Salt marshes are coastal wetlands that exist in the intertidal zone. They are among the most productive ecosystems in the world. In fact, salt marshes produce more vegetation than tropical rain forests.

Wetlands perform functions that are helpful to people and the environment. Vegetation of the salt marsh is responsible for dampening the effects of wave action in coastal areas, which reduces the amount of erosion. Wetlands also have the ability to store excess storm water, which helps in flood control. Water is cleaned naturally as it flows through a wetland.

Another very important function of salt marshes is their "nursery" capability. They provide food and shelter to juveniles of many commercial and non-commercial animals. It is estimated that wetlands contribute between 60 percent and 90 percent of the fish caught for commercial reasons. A wide variety of birds depend on wetlands such as salt marshes for both breeding and feeding grounds.

Salt marshes, as well as other wetlands, provide many functions that are both valuable to people and important to the environment. These areas, however, are continuing to be destroyed to make way for commercial or home development. The long-term effects and costs of destroying wetlands will likely outweigh the short-term benefits of using the areas for industry or condominiums.

Terms

ecology: a branch of science concerned with the interrelationship of organisms and their environments; the totality or pattern of relations between organisms and their environment.

ecosystem: an ecological community together with its physical environment, considered as a unit.

salt marsh: estuarine habitat submerged at high tide, but protected from direct wave action, and overgrown by salt-tolerant herbaceous vegetation; aquatic grasslands ("coastal prairies") affected by changing tides, temperatures, and salinity.

ADVANCE PREPARATION

A. Gather magazines with pictures of salt marshes that show their inhabitants, plant life, and migratory life.

B. Gather magazines with pictures relating the importance of salt marshes to human life.

C. Have the following on hand: transparencies, pens, and paper for charts and drawing.

PROCEDURE

I. Setting the stage

A. Give the students the following scenario:

You are a local citizen whose total income depends on the seafood industry. You are the spokesperson representing the other fishermen in your area. It is your responsibility to convince the local government that it is not in the best interest of your community or of many surrounding communities for a condominium developer to dredge and fill in valuable marshlands in order to build a new condominium. You must include as many visuals as possible in order to get your point across. You may choose from the following materials or add to them if desired: transparencies, poster board, and pictures. You must also choose a speaker to present your report to the federal government.

II. Activity

A. Divide the students into teams to complete the assignment.

B. Have the teams choose a spokesperson who will present the position statements to the local government.

C. Have the teams write their position statements.

D. Have the teams create visuals to be used.

E. Be sure to have the teams choose a moderator to keep the team "on task."

III. Follow-Up

A. Have each team present its position statement and visuals.

IV. Extension

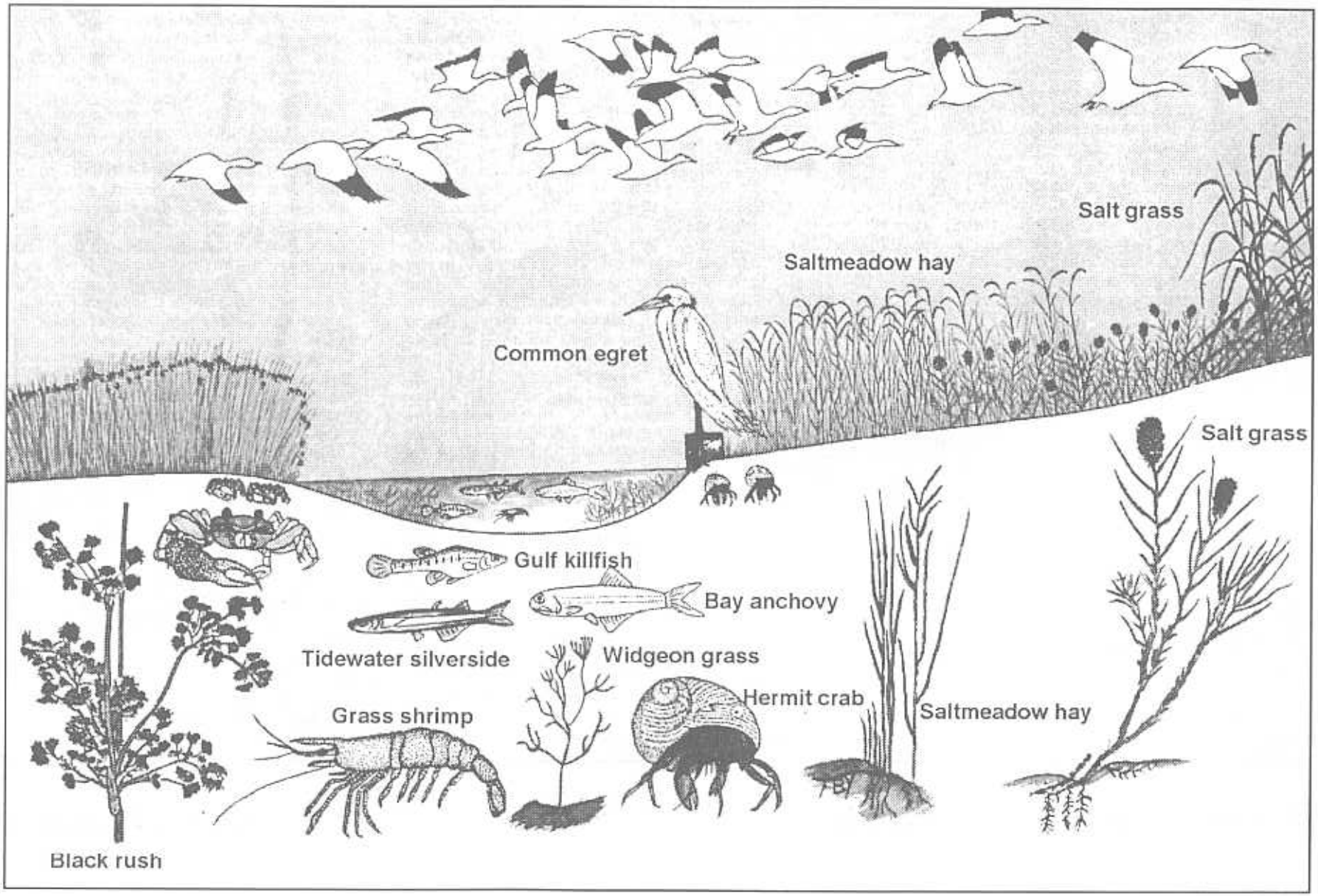
A. Choose teams to debate both sides of the issue. One team will support the developer's position and the other will support the environmentalists.

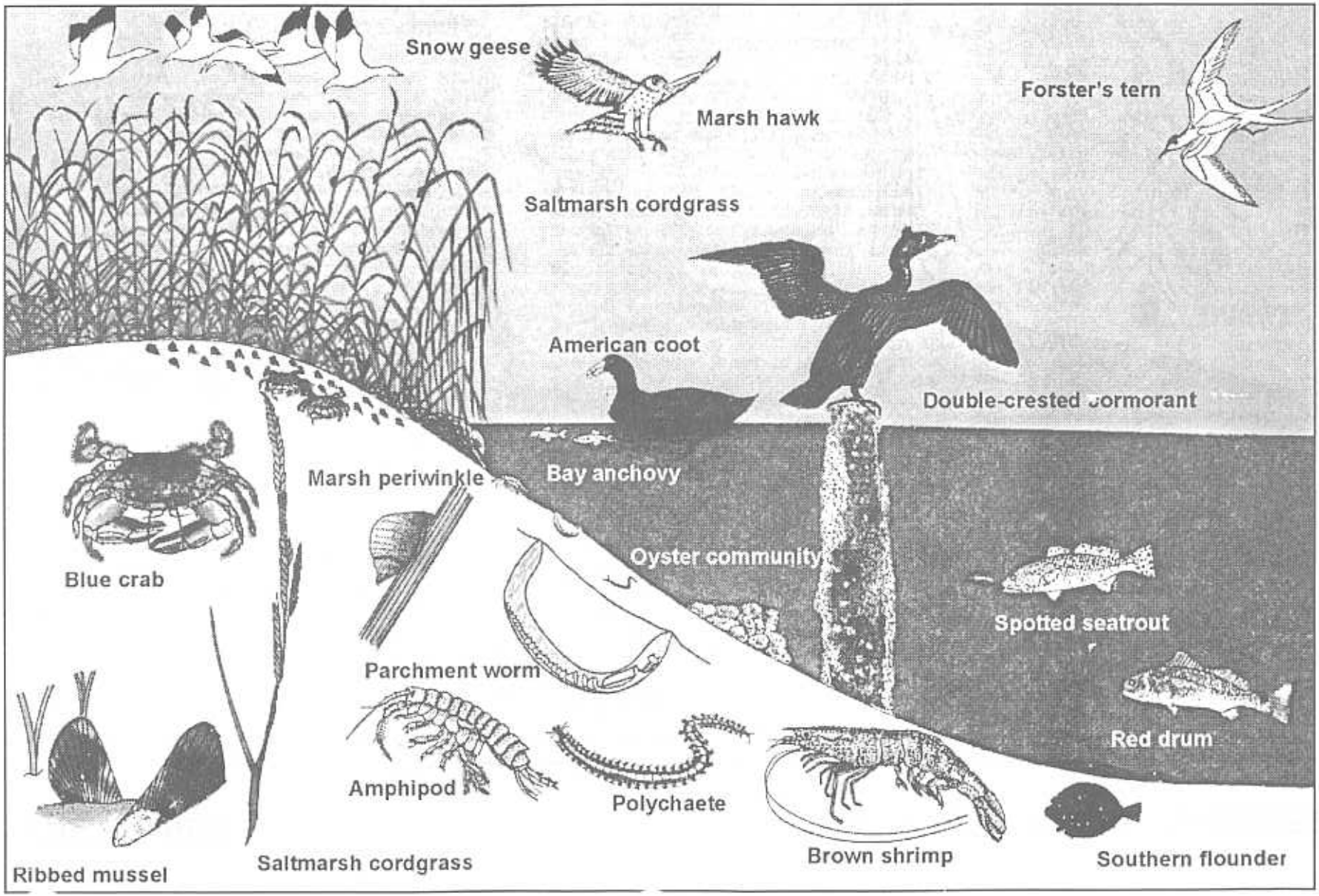
RESOURCES

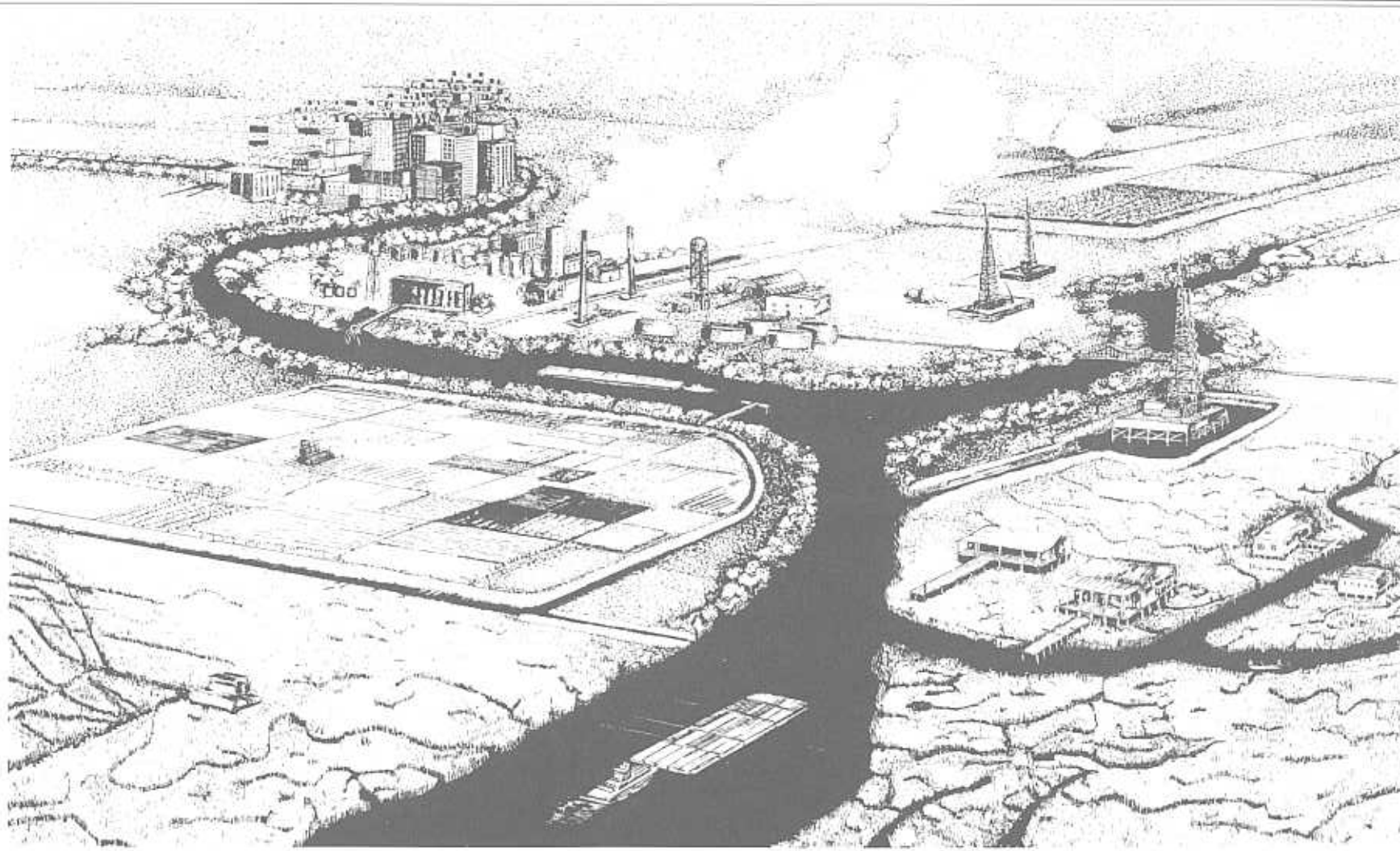
Dennison and Berry, Wetlands: Guide to Science, Law, and Technology, Noyles Publications, Park Ridge, New Jersey, 1993.

Smithey, William K., American Swamps and Wetlands, Gallery Books, New York, NewYork, 1990.

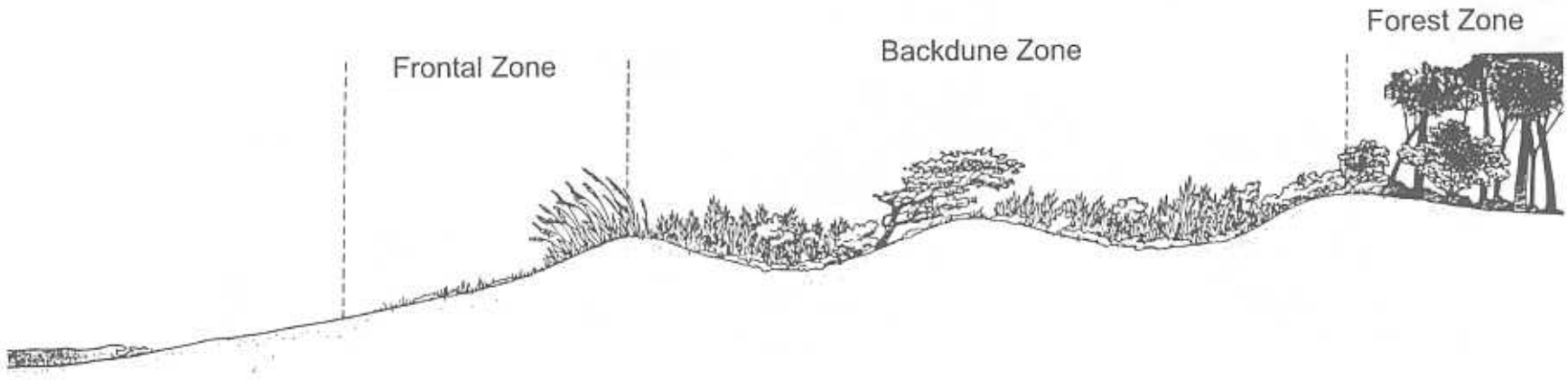
Tidal Salt Marshes: http://h2osparc.wq.ncsu.edu/info/wetlands/types3.html#sur

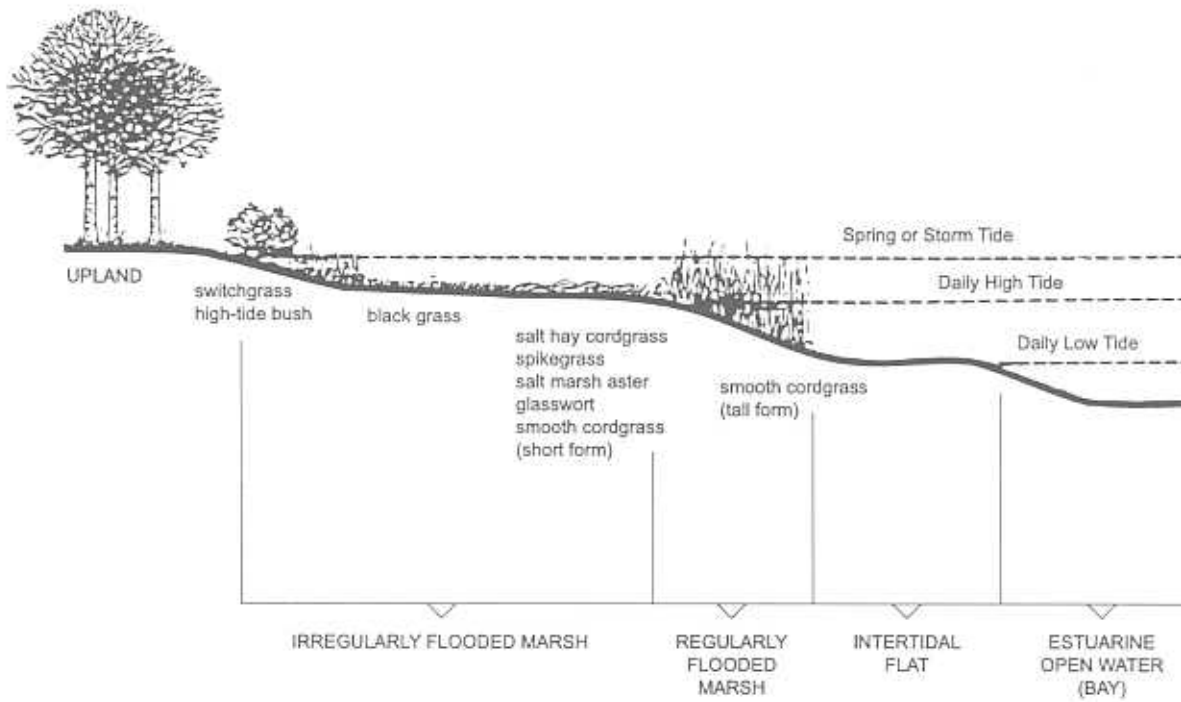

Salt grass
Saltmeadow hay
Common egret
Salt grass
Gulf killfish
Bay anchovy
Tidewater silverside
Widgeon grass
Hermit crab
Grass shrimp
Saltmeadow hay
Black rush


Snow geese
Marsh hawk
Forster's tern
Saltmarsh cordgrass
American coot
Double-crested cormorant
Bay anchovy
Marsh periwinkle
Blue crab
Oyster community
Spotted seatrout
Parchment worm
Red drum
Amphipod
Polychaete
Brown shrimp
Southern flounder
Ribbed mussel
Saltmarsh cordgrass



Two-thirds of the human population live on one-third of the world's land area adjacent to ocean coasts. Wetlands are drained for agriculture, housing, and industry. Man alters flooding patterns by constructing road embankments, canals with elevated spoil banks, and levees along streams. Ecological relationships are altered when man pollutes estuarine streams and lakes with sewage, fertilizers, and pesticides.


Frontal Zone
Backdune Zone
Forest Zone



A cross-section of a salt marsh.